U. S. Army Aviation Technical Test Center

Modeling & Simulation Office

The ATTC Modeling and Simulation Office provides analytical support to flight test engineers, optimizes the use of available flight test dollars, and enhances flight safety. This capability can also be used to assist other government agencies in the development, modeling, simulation and analysis of current and future rotorcraft. The primary mission of the ATTC rotorcraft modeling and simulation (M&S) capability is to provide simulation and support analysis to ATTC test programs in compliance with the Virtual Proving Ground (VPG) initiatives established by the U.S. Army Developmental Test Command (DTC). ATTC is developing modeling and simulation (M&S) tools enhance its capability to fulfill the Army aviation flight test mission.

Rotorcraft model development may also include compliance with the technical specifications of the HLA standardization initiatives that include satisfying and adhering to the ten HLA rules, the interface specification, and Object Model Template. An HLA-compliant rotorcraft simulation must also include a Simulation Object Model (SOM) which will provide the interface of a given rotorcraft model with the host hardware and distributed simulation(s) within the defined federation.

Two basic infrastructure initiatives, the Modeling & Simulation (M&S) Test Bed, and the Ground Truth Database, will be used to accomplish simulation development and verification/validation efforts at ATTC. The test bed will allow ATTC to integrate high fidelity, computationally-intensive M&S techniques into aviation testing of aircraft and related systems and subsystems.

The ATTC Aviation Modeling and Simulation Test Bed is the foundational M&S capability for full participation in the DTC Virtual Proving Ground. The test bed allows ATTC to integrate high fidelity, computationally-intensive M&S techniques into aviation testing, including aircraft, aircraft systems, and aircraft subsystems testing. The test bed also provides opportunities for distributed testing with other DTC test centers and proving grounds.

The Aviation Ground Truth Database (AGTB) will be an integration of database capability for managing ground truth data. As a repository of collected flight test and simulation data from ATTC's current and past testing mission, it will focus on specific aviation testing requirements that will be accessible, with proper authority, through Wide Area networking (WAN). An Integration Level Hierarchy (ILH) implemented at each DTC Test Center will be used to integrate the VPG database.

Major ATTC M&S initiatives include the Flight Test Simulation Station (FTSS) and the Mobile Infrared Scene projector (MIRSP).

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